

INTERNATIONAL SEARCH REPORT

Internatic
PCT/EP 10687

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12P7/42 C12N15/63 C12N1/21 C12N9/00 C07D339/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12P C12N C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	REED K E ET AL: "LIPOIC ACID METABOLISM IN ESCHERICHIA COLI: SEQUENCING AND FUNCTIONAL CHARACTERIZATION OF LIPA AND LIPB GENES" JOURNAL OF BACTERIOLOGY, WASHINGTON, DC, US, vol. 175, no. 5, March 1993 (1993-03), pages 1325-1336, XP008025890 ISSN: 0021-9193 cited in the application the whole document --- -/--	1-10

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone.
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

3 March 2004

Date of mailing of the international search report

16/03/2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	VAISVILA ROMAS ET AL: "The LipB protein is a negative regulator of dam gene expression in Escherichia coli" BIOCHIMICA ET BIOPHYSICA ACTA, vol. 1494, no. 1-2, 15 November 2000 (2000-11-15), pages 43-53, XP004275790 ISSN: 0006-3002	1-10
Y	the whole document	11-13
X	JORDAN SEAN W ET AL: "A new metabolic link: The acyl carrier protein of lipid synthesis donates lipoic acid to the pyruvate dehydrogenase complex in Escherichia coli and mitochondria" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 272, no. 29, 1997, pages 17903-17906, XP002268661 ISSN: 0021-9258 page 17905, left-hand column, paragraph 2	1-10
X	MORRIS TIMOTHY W ET AL: "Lipoic Acid Metabolism in Escherichia coli: The lplA and lipB Genes Define Redundant Pathways for Ligation of Lipoyl Groups to Apoprotein" JOURNAL OF BACTERIOLOGY, vol. 177, no. 1, 1995, pages 1-10, XP002268660 ISSN: 0021-9193 the whole document	1-10
X	YASUNO R ET AL: "Biosynthesis of lipoic acid in arabidopsis: cloning and characterization of the cDNA for lipoic acid synthase" PLANT PHYSIOLOGY, AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS, ROCKVILLE, MD, US, vol. 118, 1998, pages 935-943, XP002961224 ISSN: 0032-0889 the whole document	8
X	DE 100 42 739 A (DEGUSSA) 14 March 2002 (2002-03-14) claims 1-5; example 2	8

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHEN X J: "Cloning and characterization of the lipoyl-protein ligase gene LIPB from the yeast Kluyveromyces lactis: Synergistic respiratory deficiency due to mutations in LIPB and mitochondrial F-1-ATPase subunits" MOLECULAR AND GENERAL GENETICS, vol. 255, no. 3, 1997, pages 341-349, XP002268663 ISSN: 0026-8925 the whole document	8
Y	MCFARLAN SARA ET AL: "Production of alpha-lipoic acid by a recombinant organism" ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY, vol. 224, no. 1-2, 18 August 2002 (2002-08-18), page BIOT 220 XP008027301 224th National Meeting of the American Chemical Society; Boston, MA, USA; August 18-22, 2002 ISSN: 0065-7727 the whole document	11-13
P, X	JORDAN SEAN W ET AL: "The Escherichia coli lipB gene encodes lipoyl (octanoyl)-acyl carrier protein:protein transferase." JOURNAL OF BACTERIOLOGY, vol. 185, no. 5, March 2003 (2003-03), pages 1582-1589, XP002268662 ISSN: 0021-9193 the whole document	1-13
A	GOPALAN A S ET AL: "STEREOCHEMICAL CONTROL OF YEAST REDUCTIONS: SYNTHESIS OF R-(+)-ALPHA-LIPOIC ACID" TETRAHEDRON LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 30, no. 42, 1989, pages 5705-5708, XP001018157 ISSN: 0040-4039 cited in the application the whole document	

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
DE 10042739	A	14-03-2002	DE	10042739 A1	14-03-2002
			US	2002031809 A1	14-03-2002